

Appln No. 09/575,198  
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Response to Office action of April 8, 2004

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### Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

1. (Currently Amended) A printer for printing a first interface onto a first surface, thereby to generate a first interface surface, the first interface including first coded data and being at least partially based on first document data that includes first identity data indicative of at least one identity, the identity being associated with a region of the first interface, wherein the first interface includes visible information in addition to the first coded data, the visible information being based at least partially on the first document, the first coded data being substantially invisible to an average unaided human eye under daylight or ambient lighting conditions, the printer including:

an actuator;

a coded data generator configured to generate the first coded data based at least partially on the first identity data; and

a printing mechanism;

wherein the printer is configured to print the first interface onto the first surface by printing the coded data and visible information substantially simultaneously, using the printing mechanism, in response to actuation of the actuator.

2. (Currently Amended) A printer according to claim 1, wherein the first interface includes visible information in addition to the first coded data, ~~the visible information being based at least partially on the first document data~~ being printed substantially in the same region.

3. (Currently Amended) A printer according to claim 2, wherein the visible information is indicative, to a user, of one or more options, the printer being configured to:

receive indicating data indicative of secondary document data associated with at least one of the options, the indicating data being sensed, by a sensing device, from the first coded data, when one of the options is designated using the sensing device;

generate a second coded data based at least partially on the secondary document data; and

print a second interface onto a second surface on the basis of the indicating data.

4. (Original) A printer according to claim 3, wherein the printer includes an input module configured to:

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receive, from the sensing device, the indicating data;  
generate second indicating data based on the first indicating data, the second indicating data being at least partially indicative of the response data; and  
send the second indicating data to a computer system;  
the printer being configured to receive the secondary document data from the computer system.

5. (Currently Amended) A printer according to ~~any one of the preceding claims 3,~~ wherein the options include any one or more of the following:

printer status;  
printer consumables status;  
an upper level of a hierarchical help menu;  
an upper level of a network document directory; and  
a document function menu;

6. (Original) A printer according to claim 1, wherein the first coded data is indicative of at least one reference point of a region associated with the first interface.

7. (Original) A printer according to claim 6, wherein the at least one reference point is determined on the basis of a coded data layout.

8. (Original) A printer according to claim 7, wherein the printer is configured to receive the coded data layout from the computer system.

9. (Original) A printer according to claim 8, further including storage means for storing a plurality of the coded data layouts, the printer being configured to:

receive, from the computer system, layout selection information indicative of one of the coded data layouts; and

use the layout selection information to select one of the stored coded layouts for use in determining the at least one reference point.

10. (Cancelled).

11. (Original) A printer according to any one of claims 1 to 4, wherein the first coded data includes at least one tag, each tag being indicative of the identity of the region.

12. (Original) A printer according to claim 11, wherein the first coded data includes a plurality of the tags, the coded data generator being configured to ascertain a position of each tag prior to printing, the respective positions being determined on the basis of a coded data layout.

13. (Original) A printer according to claim 12, wherein the coded data generator is configured to receive the coded data layout from the computer device prior to printing the

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first coded data.

14. (Original) A printer according to claim 8, further including storage means for storing a plurality of the coded data layouts, the coded data generator being configured to: receive, from the computer device, layout selection information indicative of one of the coded data layouts; and

generate the first coded data based on the layout selection information.

15. (Original) A printer according to claim 11, wherein each of the tags includes:  
first identity data defining a relative position of that tag; and  
second identity data identifying the region.

16. (Currently Amended) A printer according to any one of claims 1 to 4 or 6 to 109, the printer being configured to print the first interface onto the first surface on demand.

17. (Currently Amended) A printer according to any one of claims 1 to 4 or 6 to 109, wherein the first interface is printed over a plurality of the pages.

18. (Currently Amended) A printer according to any one of claims 1 to 4 to 6 to 109, wherein the first surface is defined by a substrate.

19. (Original) A printer according to claim 18, wherein the substrate is laminar.

20. (Original) A printer according to claim 11, wherein the tags are disposed at predetermined positions on the first surface.

21. (Original) A printer according to claim 17, further including a binding mechanism for binding the pages into a bound document.

22. (Original) A printer according to claim 20, wherein the tags are disposed on the first surface within a tessellated pattern comprising a plurality of tiles, each of the tiles containing a plurality of the tags.

23. (Original) A printer according to claim 22, wherein the tiles interlock with each other to substantially cover the first surface.

24. (Original) A printer according to claim 23, wherein the tiles are all of a similar shape.

25. (Original) A printer according to claim 24, wherein the tiles are triangular, square, rectangular or hexagonal.

26. (Original) A printer according to claim 22, wherein the tags are disposed stochastically within each of the tiles.

27. (Original) A printer according to claim 11, wherein each of the tags includes at least one common feature in addition to the second identity data.

28. (Original) A printer according to claim 27, wherein at least one common feature is

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configured to assist finding and/or recognition of the tags by associated tag reading apparatus.

29. (Original) A printer according to claim 27, wherein the at least one common feature is represented in a format incorporating redundancy of information.

30. (Original) A printer according to claim 29, wherein the at least one common feature is rotationally symmetric so as to be rotationally invariant.

31. (Original) A printer according to claim 29, wherein the at least one common feature is ring-shaped.

32. (Original) A printer according to claim 11, wherein each of the tags includes at least one orientation feature for enabling a rotational orientation of the tag to be ascertained by associated tag reading apparatus.

33. (Original) A printer according to claim 32, wherein the at least one orientation feature is represented in a format incorporating redundancy of information.

34. (Original) A printer according to claim 33, wherein the at least one orientation feature is rotationally asymmetric.

35. (Original) A printer according to claim 33, wherein the at least one orientation feature is skewed along its major axis.

36. (Original) A printer according to claim 11, wherein each of the tags includes at least one perspective feature for enabling a perspective distortion of the tag to be ascertained by associated tag reading apparatus.

37. (Original) A printer according to claim 36, wherein the at least one perspective feature includes at least four sub-features which are not coincident.

38. (Original) A printer according to claim 15, wherein each tag includes a plurality of tag elements, the first and second identity data each being defined by a plurality of the elements.

39. (Original) A printer according to claim 38, wherein the tag elements are disposed in one or more arcuate bands around a central region of each tag.

40. (Original) A printer according to claim 39, wherein there are a plurality of the arcuate bands disposed concentrically with respect to each other.

41. (Original) A printer according to claim 40, wherein each element takes the form of a dot having a plurality of possible values.

42. (Original) A printer according to claim 41, wherein the number of possible values is two.

43. (Original) A printer according to claim 41, wherein when representing one of the

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possible values, the tag elements absorb, reflect or fluoresce electromagnetic radiation of a predetermined wavelength or range of wavelengths to a predetermined greater or lesser extent than the first surface.

44. (Original) A printer according to claim 41, wherein the possible values of the tag elements are defined by different relative absorption, reflection or fluorescence of electromagnetic radiation of a predetermined wavelength or range of wavelengths.

45. (Original) A printer according to claim 41, wherein the tags are slightly visible to an average unaided human eye under daylight or ambient lighting conditions.

46. (Original) A printer according to claim 38, wherein the tags are visible to an average unaided human eye under daylight or ambient lighting conditions.

47. (Original) A printer according to claim 15, wherein the first identity data is represented in a format incorporating redundancy of information.

48. (Original) A printer according to claim 15, wherein the second identity data is represented in a format incorporating redundancy of information.

49. (Original) A printer according to claim 48, wherein the printer is an ink printer.

50. (Original) A printer according to claim 49, wherein the tags are printed using ink that is absorbent or reflective in the ultraviolet spectrum or the infrared spectrum.

51. (Original) A printer according to claim 50, wherein the printer includes a separate ink channel for printing the tags.

52. (Cancelled)

53. (Original) A printer according to claim 52, wherein the additional information is printed onto the first surface using colored or monochrome inks.

54. (Original) A printer according to claim 53, wherein the additional information is printed onto the first surface using one of the following combinations of colored inks:

CMY;

CMYK;

CMYRGB; and

spot colour.

55. (Original) A printer according to claim 11, wherein at least a plurality of the tags are disposed stochastically upon the first surface.

56. (Original) A printer according to claim 12, wherein the tags are disposed in a regular array on the first surface, in accordance with the coded layout data.

57. (Original) A printer according to claim 56, wherein the array is triangular.

58. (Original) A printer according to claim 56, wherein the array is rectangular.

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59. (Original) A printer according to claim 56, wherein the tags are tiled over the first surface.
60. (Original) A printer according to claim 52, wherein the first surface is defined by a face of a page, the printer further including dual printing mechanisms for printing opposite faces of the page simultaneously.
61. (Currently Amended) A printer according to ~~any one of claims 1 to 4 or 6 to 10,~~ wherein the printing mechanism includes an inkjet printhead for printing ink onto the first surface.
62. (Original) A printer according to claim 61, wherein the printhead is a drop on demand inkjet printhead.
63. (Original) A printer according to claim 62, wherein the printhead is a pagewidth printhead.
64. (Original) A printer according to claim 63 wherein the printhead is configured to deliver a plurality of ink colors onto the first surface with one printing pass.
65. (Original) A printer according to claim 63, wherein the printhead includes electro-thermal bend actuators to eject the ink onto the first surface.
66. (Original) A printer according to claim 65, wherein the printer includes two sets of printheads, configured to print opposite first surfaces of a page substantially simultaneously.
67. (Original) A printer according to claim 65, including a forced filtered air delivery mechanism for keeping nozzles of the printhead relatively free of paper dust.
68. (Original) A printer according to claim 65, wherein the printhead includes moving nozzle chambers.
69. (Original) A printer according to claim 68, wherein the printer includes two sets of printheads, configured to print opposite surfaces of a page substantially simultaneously.
70. (Currently Amended) An interface surface produced by a printer according to any one of claims 1 to 4 or 6 to ~~10~~.
71. (New) A printer for printing a first interface onto a first surface, thereby to generate a first interface surface, the first interface including first coded data and being at least partially based on first document data that includes first identity data indicative of at least one identity, the identity being associated with a region of the first interface, the printer including:  
an actuator;

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a coded data generator configured to generate the first coded data based at least partially on the first identity data, the coded data including a plurality of tags, wherein each tag is indicative of the identity of the region; and,

a printing mechanism;

wherein the printer is configured to print the first interface onto the first surface, using the printing mechanism, in response to actuation of the actuator.